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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/872,882 | 06/01/2001 | Yuet-Ying Yu | FIS920010048US1 | 3167 |

7590 07/16/2003
Sean F. Sullivan
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EXAMINER

NORRIS, JEREMY C

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| ART UNIT | PAPER NUMBER |
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2827

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,882

Applicant(s)

YU ET AL.

Examiner

Jeremy C. Norris

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-23 in Paper No. 0603 is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,900,316, granted to Yu (hereafter Yu) and US 5,633,479, granted to Hirano (hereafter Hirano).

Yu discloses, referring to figure 5, a flexible sheet (38), comprising: a polyimide base layer (50, see col. 6, lines 1-5); and a metallic layer (52, 54, 56, 58). Yu does not specifically disclose that the metallic layer is formed in a grid pattern upon said base layer [claim 1]. However, Yu teaches that the flexible sheet may be used as an electrical field shield for electronic components or other electrical parts (see col. 7, lines 15-20). Additionally, Hirano teaches, referring to the prior art of figure 1, a shield layer (31-2) comprising a polyimide base layer (32) and a metallic layer (GP) formed in a grid pattern. Therefore, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to form the metallic layer into a grid pattern as taught by Hirano. The motivation for doing so would have been to employ the flexible sheet in an effective shielding layer as suggested by both Yu and Hirano. Furthermore, it has been held that more than a mere change of form is necessary for patentability. *Span-Deck, Inc v. Fab-Con, Inc.* (CA 8, 1982) 215 USPQ 835.

Moreover the modified invention of Yu and Hirano discloses that the flexible sheet further comprises a plurality of metallic layers, formed upon said base layer, at least one of said plurality of metallic layers formed in said grid pattern [claim 2], wherein said plurality of metallic layers further comprise: an adhesion layer, said adhesion layer

Art Unit: 2827

further comprising: a chromium layer (52), applied upon said polyimide base layer; and a copper layer (54), formed upon said chromium layer; a nickel layer (56), formed upon said adhesion layer; and a gold layer (52), formed upon said nickel layer [claims 3, 10-16], wherein said chromium layer is about 250 angstroms in thickness [claim 6], wherein said nickel layer is about 20,000 angstroms in thickness [claim 8], wherein said gold layer is about 350 to about 15,000 angstroms in thickness [claim 9], wherein said nickel layer provides a diffusion barrier between said adhesion layer and said gold layer [claim 17], wherein said gold layer has low contact resistance [claim 18], wherein said gold layer protects underlying layers from oxidation [claim 19], wherein said grid pattern further comprises: a plurality of horizontally oriented strips; and a plurality of vertically oriented strips claim 20]. Examiner notes that the limitations express in claims 10-16 are process limitations in a product claim. It is well settled that the presence of process limitations in product claims, which product does not otherwise distinguish over the prior art, cannot impart patentability to that product. (*In re Thorpe*, 227 USPQ 964, 966)

Regarding claims 4, 5, 7, and 21-23, the expressed limitations are only to specific sizes or range of sizes. It would have been obvious, to one having ordinary skill in the art, at the time of invention, to adapt the modified invention of Yu and Hirano to accommodate any of the expressed sizes as such a modification would merely involve a change of size. Moreover, a change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Response to Arguments

Applicant's arguments, filed 04 December 2002, with respect to the rejection of claims 3 and 6-23 under 35 USC § 112 2nd paragraph have been fully considered and are persuasive. The rejection on said grounds has been withdrawn.

Applicant's arguments filed 04 December 2002 with respect to the rejection of claims 1-23 under 35 USC § 103(a) have been fully considered but they are not persuasive.

Applicants' arguments hinge upon three points: 1) one skilled in the art would not be motivated to combine the teachings of Yu and Hirano; 2) there is no suggestion in either reference for doing so; and 3) even if there were some motivation to combine the two references, an inoperable combination would result.

Addressing contention 1), Applicants argue that an ordinarily skilled artisan would not look to combine Yu and Hirano since Yu is directed to a testing device whereas the prior art of Hirano is a wiring structure. In this assessment, Examiner feels that Applicants have not given proper weight to the alternate usage of the device of Yu as an electrical field shield. Yu distinctly states, "while the flexible conductive sheet 38 shown in FIG. 5 has been described in terms of a particular application, a person of ordinary skill in the art would recognize other uses for the flexible conductive sheet 38. For example, it could be used as an electrical field shield for electronic components or other electrical parts." (col. 7, lines 10-20) One of ordinary skill in the art would understand that "electrical parts" would include such devices as multilevel circuit board and their respective wirings. Therefore, since both the prior art of Hirano and Yu both address

structures for shielding electrical parts, an ordinarily skilled artisan would indeed look to both references to solve shielding problems.

Concerning contention 2), Applicants contend that while Yu mentions the device can be used for RF shielding, there is no corresponding disclosure in Hirano. However, Hirano discloses explicitly that the mesh patterns have been used for high frequency (e.g. RF) shielding (see col. 2, lines 50-60).

Regarding contention 3), Applicants suggest that the flexible nature of the device of Yu would cause problems if employed as a grid-like power or ground supply layer, either because the flexible layer would cause shorting or because the device of Yu would have to be rigidly attached, negating the benefits of the flexibility. Applicants seem to suggest that there can be no flexibility associated with a multilayered board having a ground or power plane. However, as an ordinarily skilled artisan would know, the prior art is replete with examples of flexible multilayered board. One such example is the instantly discussed Hirano reference. The prior art of Hirano currently discussed discloses that the insulating sheets are of polyimide (see col. 2, lines 45-55), which is the same known flexible material employed in the invention of Yu. Since the prior art device of Hirano is functional, there would a reasonable expectation of success from one of ordinary skill in the art that the combination of Yu and Hirano would be operative.

Having addressed each of Applicants' arguments traversing the application of the prior art against the instantly claimed invention, the traversal is deemed unsuccessful and the rejections are retained.

Art Unit: 2827

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 703-306-5737. The examiner can normally be reached on Mon.-Th., 9AM - 6:30 PM and alt. Fri. 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0725 for regular communications and 703-308-0725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JCSN
July 12, 2003



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